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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,876	08/22/2003	Rick West		1875

35619 7590 04/21/2006

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EXAMINER

CAVALLARI, DANIEL J

ART UNIT	PAPER NUMBER
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2836

DATE MAILED: 04/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/604,876	WEST, RICK	
	<b>Examiner</b>	<b>Art Unit</b>	
	Daniel J. Cavallari	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____   |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____  | 6) <input type="checkbox"/> Other: ____                                     |

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### **DETAILED ACTION**

The examiner acknowledges a submission of the amendment filed on 1/25/2006.

The cancellation of claims 1-24 and addition of new claim 25 is accepted.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-24 have been considered but are moot in view of the new ground(s) of rejection.

### **DETAILED ACTION**

#### ***Claim Objections***

Claim 25 is objected to because of the following informalities:

Claim 25 recites the limitation "the interface" however an interface is not previously disclosed. There is insufficient antecedent basis for this limitation in the claim. The claim will be examined as best understood to mean an interface.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki et al. (US 5,856,712), Kippley (US 2004/0004402 A1) & Schlecht (US 2001/0010637 A1).

Suzuki et al. (hereinafter referred to as Suzuki) teaches:

- Three ports (n1, n2, n3) (See Figure 3).
- A transformer (16) and a control circuit (21) (See figure 3)
- One end of each port (n1, n2, n3) is connected to a distinct winding on a common transformer (16) and the remaining end of each port is connected to a load or power source (20, 7, 11) (See figure 3).
- Each port comprising a capacitive or inductive energy storage elements (C1, C5, C4) (See Figure 3) and semiconductor switches (S1-S8) (See Figure 3 & Column 5, Lines 44-48) where individual switches are commanded on and off by the control circuit in a synchronous manner with semiconductor switches in other ports (See Column 8, Line 60 to Column 9, Line 14).
- One port dedicated to a battery (7) (See Figure 3 & Column 5, Lines 29-48).
- Semiconductor switches in the battery port operating in a free-running mode in that it includes the clock and reference voltage (VR2) which are provided to the other switches (S1-S6) (See Figure 4 & Column 8, Line 60 to Column 9, Line 55).

Suzuki fails to teach:

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- The battery transformer winding being a low impedance whereas the remaining ports are high impedance.
- Enabling energy transfer into or out of all non-battery ports simultaneously.

Suzuki teaches a transformer (16) and further teaches adjusting the turns ratio of the transformer as to meet the required voltage for the system (See Column 7, Line 63 to Column 8, Line 3) but fails to explicitly teach the battery port comprising a low impedance and the other ports that of high impedance.

Schlecht teaches a power converter in which a either a step-down or step up transformer is used to transform the voltage (See Paragraph 33).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a three port transformer with a step up ratio between the battery and the load and a 1:1 ratio between the utility (20) and the load (11). The motivation would have been to provide a load which is configured to run on a typical utility power voltage supply with backup supply power from a battery which is at a lower voltage while providing electrical coupling between all the ports.

Suzuki teaches the supplying power from the utility to the load (11) or battery (7) or from the battery (7) to the load (11) but fails to teach a bi-directional port of the load (11) at port (n2).

Kippley teaches a power converter incorporating two power sources (28 & 30) and a load (20) in which every port is bi-directional in which power can flow into or out of any port (See Paragraph 20 to Paragraph 27).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate all bi-directional ports, as taught by Kippley, into the apparatus taught by Suzuki. The motivation would have been to make the circuit more versatile by allowing either sources or loads to be attached to any port.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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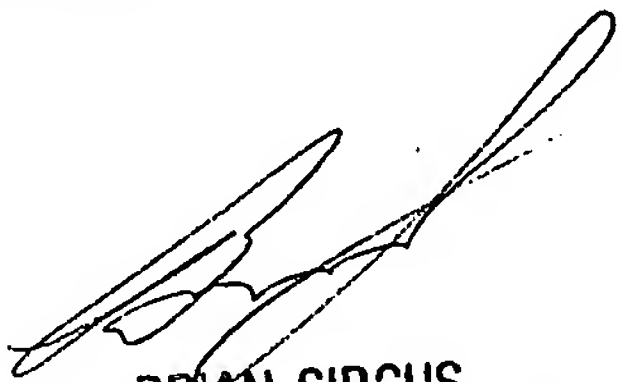
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Cavallari whose telephone number is (571)272-8541. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Cavallari

April 11, 2006



**BRIAN SIRCUS**  
SUPERVISORY PATENT EXAMINER  
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